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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,813	09/13/2000	Ajit Dubhashi	IR-1785 (2-2408)	8167
2352	7590	02/03/2004	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			NGUYEN, VINH P	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,813

Applicant(s)

DUBHASHI ET AL.

Examiner

VINH P NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15 is/are allowed.
- 6) ☒ Claim(s) 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/02/03 has been entered.

2. Claims 1-15 have been allowed since the prior art does not disclose a current sensing structure for a power semiconductor device having a power semiconductor device with its power electrode connected to an elongated conductive terminal electrode, a printed circuit board with a magnetic field transducer (Hall sensor) disposed adjacent to an edge portion, a control circuit connected to a control electrode of the semiconductor through the elongated conductive terminal electrode for controlling current flowing in the semiconductor device.

3. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson (Pat # 5,436,557) in view of Needham et al (pat # 5,570,034).

As to claims 16-18, Erickson discloses in figure 1 a current sensor having a printed circuit board (14) with an edge portion and a slot for an elongated conductor extending therethrough, a Hall magnetic field transducer (24) mounted to a surface of the board (14) and a magnetic body (20) disposed adjacent to the transducer (24). Erickson does not mention that the elongate conductor is from a power semiconductor device. However, Needham et al teach that it would have been well known in the art to sense the current flowing through an elongate conductor (401) of a power semiconductor device (CMOS) as shown in figure 4. It would have

been well known for one of ordinary skill in the art to consider that the device of Ericson is used for measuring a current in an elongate conductor of a power semiconductor device as taught by Needham et al.

As to claim 19, Erickson discloses at least one magnetic body (20) disposed adjacent to the transducer and in line with the magnetic field of the elongated conductor to increase the magnetic flux intercepted by the transducer (24).

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the current sensor of Erickson is used for measuring the current flowing through the conductor and Needham et al have the conductor on the semiconductor device to be monitored by a current sensor. Examiner uses Needham et al reference for supporting that the technique of measuring the current of the conductor of a semiconductor device is well known. Furthermore, it appears that the current sensor of Erickson could be used to monitor the conductor from different devices.


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Wakatsuki et al (Pat # 5,049,809) discloses a sensing device utilizing magneto electric transducers

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is (571)272-1964.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.


VINH P. NGUYEN
PRIMARY EXAMINER
ART UNIT 2829

01/22/04